

## **Transportation, Distribution & Logistics Cluster**

### **Facility & Mobile Equipment Maintenance Pathway –**

**Service Careers Small Engines Assistant** – Students in this major will learn employability skills, leadership, and personal development. The student will be introduced to the safety procedures and skills required to conduct minor maintenance and repairs to small gas engines. They will learn to replace spark plugs, sharpen mower blades, adjust or replace worn pulley belts, inspect fuel equipment and add and/or change oil. They will also learn to troubleshoot problems with small gas engine powered equipment and make minor repairs.

**Power Products Technician** – Students in this major will learn how to diagnose, repair and perform routine maintenance on small engines. Students will learn the major systems of small engines and multiple cylinder engine designs. They will learn troubleshooting techniques and how to identify causes of engine failures. In addition, students will also learn shop and tool safety.

**Watercraft Technician** – Students in this major will learn how to diagnose, repair and perform routine maintenance on watercraft. They will learn how to diagnose internal engine conditions without teardown, basic maintenance, and proper storage techniques. Students will also learn service procedures of both fuel and oil delivery systems and carburetors along with basic electrical principles. In addition, students will also learn about cooling and drive train systems and how to service those systems.

**Heavy Equipment Service Technician** – Students in this major will learn how to service heavy equipment such as road graders, dozers, loaders, backhoes, cranes and farm machinery. They will learn shop safety, how to inspect and properly maintain heavy equipment including checking and inspecting electrical systems, engine compartment area, tires and wheels, and the chassis. In addition, students will learn how to work on the battery, starter, charging, and ignition systems and the equipment's on-board computer. Heating, ventilation and air conditioning system diagnosis, service and repair will also be covered. The student will also cover equipment maintenance schedules and perform oil and filter changes as well as the service of the hydraulic system.

**Heavy Equipment Repair Technician** – Students in this major will learn how to service and repair heavy equipment such as road graders, dozers, loaders, backhoes, cranes and farm machinery. They will learn how to inspect, maintain, and repair heavy equipment including checking and inspecting electrical systems, engine operation, tires and wheels, clutch, transmission system and operation, and the chassis. In addition, students will learn electrical theory, how to work on the battery, starter, charging, and ignition systems and the equipment's on-board computer. Heating, ventilation and air conditioning system diagnosis and determine necessary repair will be covered. The student will also cover equipment maintenance schedules and perform oil and filter changes as well as the diagnosis, service and repair of the hydraulic system. They will also learn how to diagnose causes of leaks and noises and to determine the needed repairs to maintain optimum equipment operation.

**Heavy Equipment Technician Workforce Transition** – Students must complete the heavy equipment technician major prior to enrolling in this one. In this major the students will learn leadership, personal development and employability skills. Also included in the major is a Work-Site Experience (WSE) that is planned, organized, and conducted at the student's place of employment that will be used to broaden skills and increase effectiveness and productivity. In addition, a formalized mentor-ship will be included and based on the instructional process for the purpose of accelerating the student's skill development and individual transition into the heavy equipment workforce.

**Marine Repair Technician** – Students in this major will learn how to service, repair, and perform routine maintenance on boats. They will learn how to use factory service information, the proper use of marine service tools and equipment, proper storage techniques, and boat winterization. Students will also learn how to use diagnostic equipment to test engine electrical systems and how to service outboard lower units and stern drive units. In addition, students will learn how to install boat control systems, such as steering controls. Accessory installation will also be covered.

**Marine Technician Workforce Transition** – Students must complete the marine technician major prior to enrolling in this one. In this major the students will learn leadership, personal development and employability skills. Also included in the major is a Work-Site Experience (WSE) that is planned, organized, and conducted at the student's place of employment that will be used to broaden skills and increase effectiveness and productivity. In addition, a formalized mentor-ship will be included and based on the instructional process for the purpose of accelerating the student's skill development and individual transition into the marine technician workforce.

**Motorcycle Technician** – Students in this major will learn how to service, repair and perform routine maintenance on motorcycles. They will learn how to diagnose internal engine conditions without teardown, how to service and adjust valve train components, and how to troubleshoot, service and repair fuel delivery systems and electrical systems. In addition, students will also learn how to disassemble, inspect, and reassemble engines, how to inspect, remove, repair/replace, and reinstall wheels, tires, and braking systems and how to service suspension systems and drive trains.

**Motorcycle Technician Workforce Transition** – Students must complete the motorcycle technician major prior to enrolling in this one. In this major the students will learn leadership, personal development and employability skills. Also included in the major is a Work-Site Experience (WSE) that is planned, organized, and conducted at the student's place of employment that will be used to broaden skills and increase effectiveness and productivity. In addition, a formalized mentor-ship will be included and based on the instructional process for the purpose of accelerating the student's skill development and individual transition into the motorcycle technician workforce.